C37.63 Meeting Minutes

January 30, 2023 – On-Line Teams Meeting

Chair: Frank DeCesaro Vice-Chair: Open Acting Secretary: Karla Trost

Meeting Agenda

1. Call to Order ..... Frank DeCesaro

The meeting was called to order at 10: 03 AM CST.

2. Introduction of Members and Guests ..... Frank DeCesaro

Introductions were performed via the chat.

3. Patent Slides for Standards Development Meetings ..... Frank DeCesaro

- **a.** https://mentor.ieee.org/myproject/Public/mytools/mob/slideset.pdf
- **b.** The slides were shown. The Call for any patent claims did not result in any responses.

4. IEEE Copyright Policy for Participants in IEEE Standards Work

- **a.** https://standards.ieee.org/wp-content/uploads/2022/02/Copyright-Policy-for-Participants.pdf
- **b.** The slides were shown.

5. Membership and quorum Check ..... Frank DeCesaro

- **a.** Comment about membership roster update ..... Frank DeCesaro
  - The Flow chart of path to membership was shown ..... Frank DeCesaro
- **b.** New Members as of this meeting ..... Frank DeCesaro
  - John Kapitula, Kennedy Darko, Roberto Olivares, Larry Putnam, and Caryn Riley ..... Frank DeCesaro
- **c.** Voting Membership List was displayed. ..... Frank DeCesaro
- **d.** Quorum check ..... Karla Trost

Of 22 members, 12 were present. Quorum was achieved.

6. Approval of the Agenda .....

- **a.** Motion was made by C. Riley and seconded by C. Ambrose.
- **b.** The agenda was approved.

7. Approval of Minutes of last meeting ..... Frank DeCesaro

- **a.** The agenda incorrectly indicated that the minutes were previously published on ImeetCentral (S22C3763miR2.pdf)and the IEEE (S22RODEa2REV0.pdf) Switchgear site. Those pointed to the Spring of 2022, not the Fall of 2022 minutes. This error was caught and the correct minutes, from the October 17, 2022 – Hilton Burlington Lake Champlain, Burlington, VT meeting were displayed. There were no corrections or additions, and the minutes were approved as displayed.

8. Review of C37.63D2
   a. Discussion on Clause 7.21, Ice Loading. This had been removed from draft and approved at our April 14, 2022, working group meeting. It has been reinserted in draft 2. Requires working group vote to keep the reinsertion in . ..... Frank DeCesaro
      - It was identified that this was resolved in the Fall 2022 meeting and this item no longer needs to be reviewed.
   b. Review of working group comments received for C37.63D2 ..... Working Group
      - Comment #60 (Line 821, 7.2.6.1) – The Ad hoc committee made a recommendation which went out for an electronic vote.
        - There were 11 responses (of 17 members), quorum was achieved.
        - For Question 1 which was "Should the normative undated reference in clause 2 of C37.68-D2 be changed from "IEEE Std 4" to a dated reference to IEEE Std 4-2013".

          There were (9) Yes, (0) No, (2) Abstain. Therefore, the question passes.
        - For Question 2 which was ""Should subclause 7.2.6.1 c) of C37.68D2 be changed to read c) The external insulation of outdoor switchgear shall be subjected to wet withstand tests according to 11.2, IEEE Std 4-2013 using the precipitation conditions in Table 5, IEEEE 4-2013 under "Standard test procedure"?"

          There were (10) Yes, (0) No, (1) Abstain. Therefore, the question passes.
      - Comment #40 (Submersibility testing) - The Ad hoc committee made a recommendation which went out for an electronic vote.
        - There were 12 responses (of 17 members), quorum was achieved.
        - (7) Yes, (2) No, (3) Abstain. Although the question passed, it was agreed that there would be discussion in this meeting.
        - One voter expressed concern about where to place the language in the draft and the content differences between the C37.100.1 and C37.62.
        - One voter submitted some potential changes:
          - The device must be tripped open and then ~~remotely~~ closed …
            - Original Comment – Manual closing should be an option.
            - This change will be made.
          - … a maximum of three ~~two~~ days without operation is allowed.
            - Original Comment – This is to allow for three-day weekends.
            - A concern was raised with changing this to 3 days as it is only a 10-day test. A test lab said they would schedule around a 3-day weekend. The other test lab members and several manufacturers agreed.
            - The commenter deferred to the test lab. This change will not be made.
          - The submersible sectionalizer …
            - Original Comment - This is to reinforce what we're addressing, so that it would not be taken out of context.
            - This change will be made.
          - If the cable connectors allow water to migrate into the IEEE-386 interfaces, the IEEE interfaces may be cleaned and re-terminated prior to electrical testing, ~~DUT causing a dielectric withstand failure~~, ~~the test can be repeated,~~ since the cable connector standard, IEEE 386, does not require

performance at the same or greater liquid depth.

- Original Comment – The bushing connection to the DUT (designed to be at least semi-permanent) should be more substantial than the IEEE-386 interface. However, the IEEE-386 interface itself is likely to be problematic in this test. Therefore, the cleaning of the bushing or bushing well should be allowed (perhaps even recommended), and the other (external) IEEE-386 connections probably should be replaced, since they are not integral to the DUT.
- A concern was raised that the language is not clear on if the insulation withstand test is being performed while the device is submersed. During discussion the language for the first sentence of the subclause was suggested to be "passed the test if after being removed from the submersion tank, it passes". This was later removed due to other changes.
- Discussion was held about the intention of bullet a) and if the intent is water between the interfaces and water ingress into the DUT (tank). This discussion also covered the impact of the 386 interface ratings on the test.
- The DUT description calls out that the integral parts of the device must be subjected to the test. Discussion on what is included integral. (Bushing/ Bushing well mounted to the tank wall are integral, the connected cables are not.)
- Suggested addition of "bushing well" to the example list of integral components. After reviewing the other sentences in the subclause, this sentence was changed to "The subcomponents that are an integral".
- This would then change the after-test subclause to remove everything after the first sentence in a).
- Suggestion to remove the word "routine" from the first sentence in the Device condition after test.

- C. Riley made a motion to accept the revised language (Appendix 1) for the submersion test as discussed in the meeting. C. Ambrose seconded. 10 in favor. 0 negative. 2 abstentions. Motion passed.

c. Discussion on working group ballot for subclause 7.75. .....Added to the agenda.

- "The ad hoc group recommended maintaining the intent of C37.63-2013 version of the document by changing subclause 7.5.5 from:
  Subclause 7.7.5 of IEEE Std C37.100.1-2018 applies except the switchgear shall withstand 80% of the rated dry power frequency withstand voltage specified under dielectric tests.
  To: Subclause 7.13 applies."
- 7.13 heading includes the short-time withstand current tests.
  - The published version of C37.63 requires 200% for the short-time withstand current tests.
- The ad hoc group (Morton, Borck, and DeCesaro) recommends removing the reference to "short-time withstand current tests" from the title of 7.13 and to leave the reference to C37.100.1 in 7.5.5. Seconded by: C. Borck.
  - 9 in favor, 0 negative, 3 abstentions. Motion passed.

d. Discussion on having C37.63 submitted to the SA Balloting process. Are we ready?

- F. DeCesaro made a motion that the C37.63 Working group request approval from RODE to submit C37.63-D3, as it stands on 1/30/23, to IEEE SA process for balloting.
- I. Rokser seconded.
- 9 in favor, 0 negative, 3 abstentions. Motion passed

9. Other Business? No other items brought up.

10. Next Meeting ..... Frank DeCesaro

Date: Spring 2023, Clearwater, FL Exact dates will be announced if known.

11. Meeting adjourned at 11:42AM CST.

Attendees

Role	First Name	Last Name	Name	4/19/202	10/11/20	4/11/202	10/17/20	1/30/202
Member	Chris	Ambrose	Chris Ambrose		X	X		X
Member	Christopher	Borck	Christopher Borck	X	X	X	X	X
Chair	Frank	DeCesaro	Frank DeCesaro	X	X	X	X	X
Member	Paul	Found	Paul Found	X	X	X	E	X
Member	Harold	Hirz	Harold Hirz	X	X	X	X	X
Member	Benjamin	Isaak	Benjamin Isaak	X	X			X
Member	Travis	Johnson	Travis Johnson	X	X	X	X	X
Member	Christopher	Morton	Christopher Morton	X	X	X	X	X
Member	Caryn	Riley	Caryn Riley			X	X	X
Member	Ian	Rokser	Ian Rokser	X		X	X	X
Member	Karla	Trost	Karla Trost	X	X		X	X
Member	Xin	Zhou	Xin Zhou		X		X	X

APPENDIX 1: Revised language for the Submersible Test Clause

1.1 Test Procedure for Submersible Units

1.1.1 General

The intention of this clause is to adequately test the submersible section as an entity while recognizing the modularity of this type of apparatus. The device may be made up of any number of interrupters and subcomponents that provide a sealed entrance/exit to the overall device and that may provide ingress for external liquids. ~~Connectors, bushings, and terminators~~ The subcomponents that are an integral part of the device shall be part of the device when the device is subjected to the tests described. These subcomponents may be covered by other standards. All qualification testing per those standards does not need to be repeated if the mounting and sealing methods of the component to the device do not differ from the subcomponent testing method.

The capability of the device to operate properly within the usual service conditions for submersible equipment shall be demonstrated by successful tests of a sample unit, and by reference to successful tests on individual components, and interconnections that comprise the unit. In general, it shall not be required to repeat tests on a component, for example, a window into the device, if it has already been tested in an equivalent device.

1.1.2 Test Requirements

The following no-load submersion test must be completed on sectionalizers designed to operate while submerged.
The test process shall use one of the following methods:

a) Submersion under the full depth of liquid (see 4.1).
b) Submersion under a partial depth of liquid with sufficient pressure to correspond to the stated depth of liquid.

The device must be tripped open and then ~~remotely~~ closed no less than 3 times per day over a 10 day test period. For practical purposes to accommodate lab schedules, a maximum of two days without operation is allowed. However, a total of 30 operations must be completed during the test period and at least 3 of those operations must be performed on the last day.

Test reports shall document the depth and duration of the submersion, the device requirements, and results of the functional tests.

1.1.3 Device condition after Test

A device is considered to have passed the test if after the submersion test, it passes the following ~~routine~~ tests.

~~a)~~ The submersible sectionalizer shall be capable of withstanding 80% of the dry power frequency insulation withstand test level for one minute~~. If the cable connectors allow water to migrate into the IEEE-386 interfaces, the IEEE interfaces may be cleaned and re-termiinated prior to electrical testing, DUT causing a dielectric withstand failure, the test can be repeated, since the cable connector standard, IEEE 386, does not require performance at the same or greater liquid depth.~~
b) The resistance of the main circuit has not increased by more than 20%, if the resistance has increased by more than this amount, a continuous current test at rated continuous current with thermocouples as practicable shall be conducted to ensure the sectionalizer will not experience thermal runaway.
c) At the end of the test a minimum of 5 manual open/close operations shall be successfully performed
d) Verification of no water ingress into the sealed enclosure.